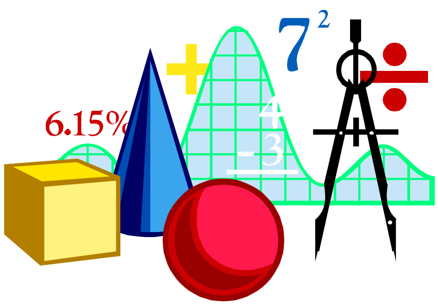
MATHEMATICS FOR PRIMARY FIVE SECOND TERM

PREPARED BY

Mr. MAHMOUD



SHEET (1)

Natural numbers (N)

[1] Underline the natural numbers from the following numbers:

15 6.2 0 417 $\frac{4}{5}$ 0.7 91328

[2] Complete using the suitable symbol from ($\notin$, $\in$, $\subset$ or $\not\subset$):

(a) 2 …… N

(b) { 2 } …… N

(c) { 0 } …… N

(d) 0 …… N

(e) 22.22 …… N

(f) { 55 } …… N

(g) { 2, 4 , 6 } …… N

(h) { 2, 0.2 } …… N

(i) $\varnothing$ …… N

(j) 21 ÷ 3 …… N

(k) $\frac{3}{4}$ …… N

(l) $\frac{15}{3}$ …… N

(m) { 1, 3 } $\cap$ { 2, 4 } …… N

(n) { 0 } $\cup$ { 1, 2, 3, … } …… N

(o) { 0 } …… the set of counting numbers.

[3] Complete:

(a) E $\cup$ O = ……

(b) E $\cap$ O = ……

(c) E – O = ……

(d) O – E = ……

(e) N $\cap$ O = ……

(f) N $\cap$ E = ……

(g) N $\cap$ P = ……

(h) N $\cup$ E = ……

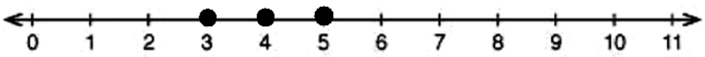
(i) N $\cup$ O = ……

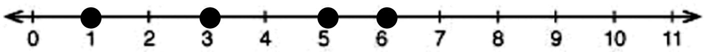
(j) N – O = ……

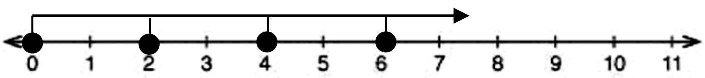
SHEET (2)

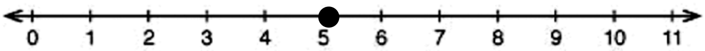
Ordering and Comparing Natural Numbers

[1] Write down the represented set on the following number line:

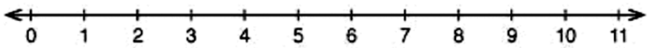
(a) 

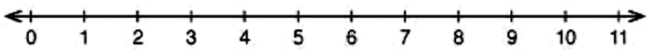
(b) 

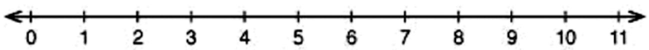
(c) 

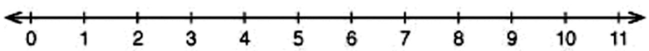
(d) 

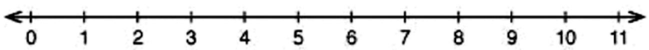
[2] Represent each of the following sets on the number line:

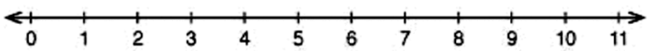
(a) { 1, 4 } 

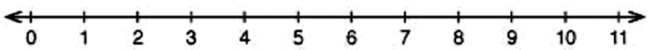
(b) { 4 } 

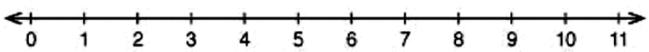
(c) { 0, 2, 3 } 

(d) { 1, 2, 3, 5 } 

(e) { 3, 4, 5, … } 

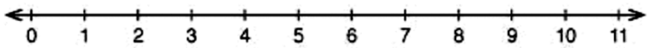
(f) { 1, 3, 5, 7, … } 

(g) { 7, 9 } $\cup$ { 8 } 

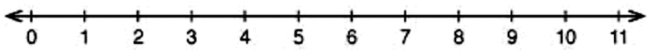
(h) {2, 4, 7, 19} $\cap$ {2, 4, 9} 

[3] Write, using the listing method, each of the following sets of numbers and represent each of them on the number line:

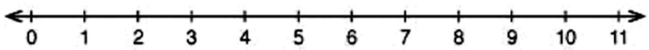
(a) The set of counting number less than 4



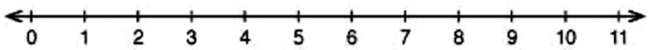
(b) The set of natural numbers less than 7



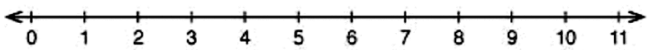
(c) The set of natural numbers greater than 3



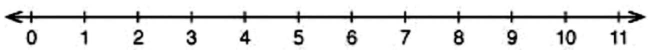
(d) The set of natural numbers between 1 and 4



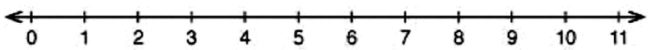
(e) The set of natural numbers greater than 3 and less than 7



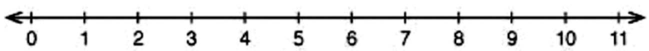
(f) The set of natural numbers less than or equal to 5



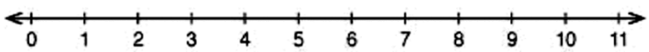
(g) The set of natural numbers greater than or equal to 4



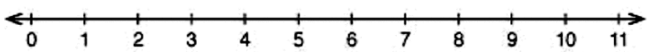
(h) The set of odd numbers



(i) The set of even numbers



(j) The set of prime factors of 30



[4] Complete:

(a) The smallest natural number is ……

(b) The smallest counting number is ……

(c) The least even number is ……

(d) The least odd number is ……

(e) The least prim number is ……

(f) The least natural number between 4 and 9 is ……

(g) The greatest natural number between 0 and 10 is ……

[5] Rewrite the following statements using [> , ≥ , < or ≤]:

(a) X is less than 8 ....

(b) X is greater than 7 ....

(c) 8 is less than X ....

(d) 5 is greater than X ....

(e) Z is greater than or equal to L ....

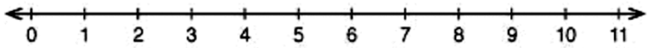
(f) 9 is less than or equal to L ....

(g) 9 is greater than or equal to L ....

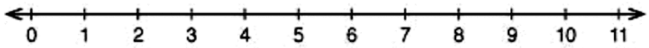
(h) Z is between 9 and 17 ....

[6] Write the following sets using the listing method and represent them on the number line:

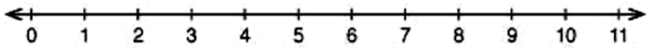
(a) X = { a : a ∈ N , where a is between 0, 4 }



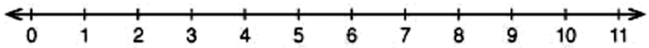
(b) X = { a : a ∈ N , where a is less than 3 }



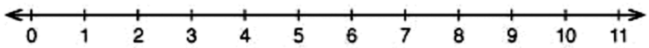
(c) Z = { a : a ∈ N , a < 6 }



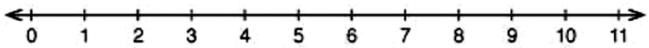
(d) Y = { a : a ∈ N , a ≤ 5 }



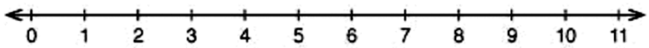
(e) Y = { a : a ∈ N , a ≥ 3 }



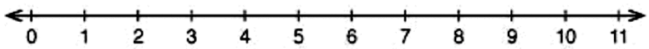
(f) Z = { a : a ∈ N , a > 4 }



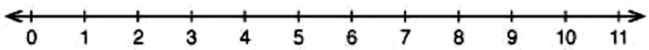
(g) M = { a : a ∈ N , 2 ≤ a ≤ 5 }



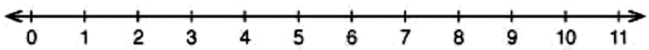
(h) L = { a : a ∈ N , 3 < a ≤ 6 }



(i) X = { b : b ∈ N , 7 > b > 4 }



(j) X = { d : d ∈ O , 3 ≤ d < 9 }



[7] Put (<) , (>) or (=):

(a) 908 …… 9008

(b) 5075 …… 5057

(c) 2239 …… 2229

(d) $x + 18$ …… $x + 17$, where $x \in N$

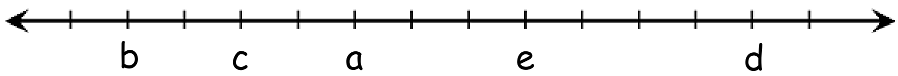
(e) $x - 18$ …… $x - 17$, where x is a natural number greater than 20

(f) x …… 75 , where $x \in \{ 30, 21, 32, 33 \}$

(g) y …… 18 , where $y \in \{ 20, 21, 22, 23, 24 \}$

(h) z …… 35 , where $z \in \{ 35 \}$

[8] From the following number line complete using (<) or (>):



(a) a …… b because a is placed to the right of b.

(b) b …… c because b is placed to the left of c.

(c) c …… e because ……………………………………………………………………………

(d) e …… b because ……………………………………………………………………………

(e) a …… d because ……………………………………………………………………………

(f) c …… d because ……………………………………………………………………………

SHEET (3)

Addition Operation & Subtraction Operation on (N)

For any natural numbers a , b and c , then		
The property	**Description in symbols**	**Example**
① **Closure**	$a \in \mathbb{N}$, $b \in \mathbb{N}$ $(a + b) \in \mathbb{N}$	$6 \in \mathbb{N}$, $4 \in \mathbb{N}$ $6 + 4 = 10 \in \mathbb{N}$
② **Commutative**	$a + b = b + a$	$2 + 5 = 5 + 2 = 7$
③ **Associative**	$(a + b) + c = a + (b + c)$	$(2 + 1) + 5 = 2 + (1 + 5) = 8$
④ **Additive identity**	$a + 0 = 0 + a = a$	$7 + 0 = 0 + 7 = 7$

Notice that :

- An even number + an even number = an even number.
  For example : • 2 + 4 = 6 • 6 + 6 = 12
- An odd number + an odd number = an even number.
  For example : • 3 + 5 = 8 • 7 + 7 = 14
- An even number + an odd number = an odd number.
  For example : • 2 + 3 = 5 • 5 + 4 = 9

[2] Complete to get a true statement:

(a) 213 + 57 = 57 + ... (.................................... property)

(b) 149 + 673 = 673 + ... (.................................... property)

(c) 17 + ... = ... + 17 = 17 (.................................... property)

(d) 28 + (72 + 59) = (28 + ...) + 59 (.................................... property)

(e) (61 + 35) + 19 = ... + (35 + 19) (.................................... property)

(f) a + ... = b + ... (.................................... property)

(g) (...... + a) + b = c + (...... + b) (.................................... property)

[3] Find the sum using commutative and associative properties in N, state the property used:

(a) 28 + 15 + 72 = ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

(b) 753 + 972 + 247 = ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

(c) 672 + 665 + 335 + 328 = ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

(d) 973 + 299 + 227 + 901 = ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

(e) 257 + 71 + 43 = ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

[4] Complete using (∈ or ∉):

(a) (3+7) …… N

(b) (45-35) …… N

(c) (8-10) …… N

(d) (80-80) …… N

(e) (0-0) …… N

(f) (28727-9543) …… N

(g) (16 – 9) – 7 …… N

(h) 3 – (9 – 2) …… N

[5] Complete using (= or ≠):

(a) 35 - 28 …… 28 – 35

(b) 0 – 25 …… 25 – 0

(c) 208 + 3541 …… 3541 + 208

(d) (17 + 90) + 125 …… 17 + (90 + 125)

(e) (215 – 147) - 69 …… 215 – (147 – 69)

[6] Complete using "odd" or "even":

(a) The sum of two odd numbers = ……………… number.

(b) The sum of two even numbers = ……………… number.

(c) An odd number + an even number = ……………… number.

(d) If x is an odd number, then (x + 2) is ……………… number.

(e) If x is an even number, then (x + 2) is ……………… number.

(f) If x is an even number, then (x + 1) is ……………… number.

(g) If x is an odd number, then (x - 1) is ……………… number.

SHEET (4)

Multiplication Operation & Division Operation on (N)

[1] Use the commutative and associative properties to simplify finding the result of each of the following:

(a) $2 \times 347 \times 5$ = ………………………………………………………………

= ………………………………………………………………

= ………………………………………………………………

= ………………………………………………………………

(b) $4 \times 128 \times 25$ = ………………………………………………………………

= ………………………………………………………………

= ………………………………………………………………

= ………………………………………………………………

(c) $8 \times 49 \times 125$ = ………………………………………………………………

= ………………………………………………………………

= ………………………………………………………………

= ………………………………………………………………

(d) $20 \times 16 \times 5$ = ………………………………………………………………

= ………………………………………………………………

= ………………………………………………………………

= ………………………………………………………………

[2] Use the distributive property to simplify finding the result of each of the following:

(a) 35 × 64 + 35 × 36 = ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

(b) 137 × 43 – 37 × 43 = ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

(c) 59 × 67 – 59 × 57 = ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

(d) 37 × 101 – 37 = ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

[3] Use the distributive property to simplify finding the result of each of the following:

(a) 52× 101 = ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

= ……………………………………………………………

(b) 915 × 1001 = ………………………………………………………

= ………………………………………………………

= ………………………………………………………

= ………………………………………………………

(c) 45 × 99 = ………………………………………………………

= ………………………………………………………

= ………………………………………………………

= ………………………………………………………

(d) 572 × 99 = ………………………………………………………

= ………………………………………………………

= ………………………………………………………

= ………………………………………………………

[4] Complete using (∈ or ∉):

(a) (4 ÷ 2)	……	N	(b) $\frac{0}{7}$	……	N
(c) (4 × 2)	……	N	(d) (3 ÷ 4)	……	N
(e) (18 ÷ 4)	……	N	(f) (12 ÷ 4)	……	N
(g) $\frac{3}{2-2}$	……	N	(h) (3 + 7)	……	N
(i) (9 – 9)	……	N	(j) (0 × 6)	……	N
(k) 63 + 24	……	N	(l) (18 – 25)	……	N
(m) (7 ÷ 7)	……	N	(n) (25 ÷ 1)	……	N
(o) (7×2 - 2×7)	……	N	(p) (7×2 - 7×5)	……	N

[5] Complete:

(a) The additive neutral element in N is ……… and the multiplicative neutral element in N is ………

(b) a × 1 = 1 × a = a (……………………………… property)

(c) If 9 × 13 = 13 × x , then x = ………

(d) 99 added to the multiplicative neutral element = ………

(e) (12 × 4) × ……… = 12 × (4 × 7)

(f) (83 × 514) × 96 = ……… × (514 × 96)

(g) ………… + 354 = 354

(h) 7 × 0 = $\frac{\dots\dots}{9}$ = ………

(i) 2358 × 17 = 2358 × (7 + ………)

(j) …… × 1 = …… × …… = 73

(k) An odd number × an even number = …………………… number

SHEET (5)

Numerical Patterns

[1] Complete in the same pattern:

(a) 5, 7, 9, 11, ………, ………

(b) 1, 4, 7, 10, ………, ………

(c) 2, 7, 12, 17, ………, ………

(d) 12, 10, 8, 6, ………, ………

(e) 1, 2, 4, 7, ………, ………

(f) 2, 4, 8, 16, ………, ………

(g) 1, 3, 9, 27, ………, ………

(h) 2, 8, 32, ………, ………

(i) 5, 15, 25, 35, ………, ………

(j) 142, 143, 145, 148, 152, ………, ………

(k) 89, 79, 70, 62, 55 , ………, ………

(l) 36, 18, 9, 4.5, ………, ………

(m) 1, 1, 2, 3, 5, 8, ………, ………

SHEET (6)

General Exercises on Unit One

First: Complete the following to get correct statement:

(1) The additive neutral element in (N) is ………, while the multiplicative neutral element in (N) is ………

(2) The least natural number is ………

(3) The least number in the set of counting numbers is ………

(4) The set of natural numbers less than 5 is ……………………………

(5) The set of natural numbers which are more than 4 and less than 9 is ………………………………

(6) If X = $\{x : x \in N, 1 \le x < 6\}$, then X = …………………………………

(7) If x is an odd number, then (x + 2) is ………… number.

(8) If x is an odd number, then (x - 1) is ………… number.

(9) If 7 × 15 = 15 × x, then x = …………

(10) If 4 × 35 = (x × 5) + (x × 30), then x = …………

(11) If 86 = 6 + x × 10, then x = ……………

(12) $\frac{16 - \ldots\ldots}{8} - \frac{\ldots\ldots - 25}{5} =$ ***zero***

(13) 1, 4, 8, 13, ………, ……… (in the same pattern)

(14) 1, 1, 2, 3, 5, 8, ………, ……… (in the same pattern)

Second: Choose the correct answer:

(1) 1, 4, 9, 16, ……… (23, 24, 25)

(2) If X = {x : $x \in$ N, 3 $\le x$ < 5}, then X = ……
({4} , {3} , {3 , 4} , {4 , 5})

(3) If O is the set of odd numbers, then O …… N
($\subset$, $\not\subset$, $\notin$, $\in$)

(4) The least prime number × any prime number = ……… number.
(odd , even, prime , otherwise)

(5) (5 – 7) ……… N ($\subset$, $\not\subset$, $\notin$, $\in$)

(6) 8 × …… = …… × 8 = 1000 (992 , 25 , 125 , 250)

(7) $\frac{24-6}{12-9}$ ……… N ($\subset$, $\not\subset$, $\notin$, $\in$)

(8) {2 , 3 , 0.4} ……… N ($\subset$, $\not\subset$, $\notin$, $\in$)

Third: Use the properties of distribution, commutation and association in (N) to find the result of each of the following:

(1) 18 × 99

…………………………………………………………………………………………………

…………………………………………………………………………………………………

(2) 56 × 1002

……………………………………………………………………………………………

……………………………………………………………………………………………

(3) 872 + 199 + 128 + 801

……………………………………………………………………………………………

……………………………………………………………………………………………

(4) 413 + 152 + 187 + 348

……………………………………………………………………………………………

……………………………………………………………………………………………

(5) 35 × 64 + 35 × 36

……………………………………………………………………………………………

……………………………………………………………………………………………

(6) 137 × 43 – 37 × 43

……………………………………………………………………………………………

……………………………………………………………………………………………

SHEET (7)

Unit (2) Equations

First: Mathematical Expressions

[1] Complete using a suitable symbolic expression:

(1) Add 7 to the number x ……………………………

(2) Subtract 5 from the number Y ……………………………

(3) Multiply 9 by the number Z ……………………………

(4) Divide the number M by 2 ……………………………

(5) Add a number Z to 35 ……………………………

(6) Five less than a number X ……………………………

(7) Nine more than a number Y ……………………………

(8) Subtract a number F from 24 ……………………………

(9) Three times a number G ……………………………

(10) Product of a number K by 3 ……………………………

(11) Quotient of a number S by T ……………………………

(12) Seven divided by a number C ……………………………

(13) Take away a number A from 15 ……………………………

(14) Seven increased by a number S ……………………………

(15) A number Q decreased by 13 ……………………………

(16) Three fifths a number P ……………………………

(17) Subtract 5 from a number ……………………………

(18) Add 7 to the three times of a number ……………………………

(19) Add 15 to the half of a number ………………………………

(20) Subtract 6 from one third of a number ………………………………

(21) 8 is added to the double of a number ………………………………

(22) 9 is subtracted from triple of a number ………………………………

[2] Write each symbolic expression in words:

(1) S – 5 ……………………………………………………………………………………

(2) 6 – S ……………………………………………………………………………………

(3) V + 8 ……………………………………………………………………………………

(4) 9 Y ……………………………………………………………………………………

(5) $\frac{X}{7}$ ……………………………………………………………………………………

Second: The Constant and the Variable

[1] Write the mathematical relation between X and Y:

(1) If the number Y is six times the number X ………………

(2) If the number Y is seven more than the number X ………………

(3) If the number X is two less than the number Y ………………

(4) If the number X is 3 more than the double of Y ………………

[2] Complete:

(1) If the sum of two numbers is 20 and one of them is X, then the other = ………………

(2) The sum of what Ali and Ahmed have is L.E. 30 if Ali has L.E. X, then Ahmed will have L.E. ………………

(3) The perimeter of a square is P, and its side length is S, then the mathematical relation between P and S is P = ………………

(4) If the lengths of two adjacent sides of a parallelogram are X and Y, then its perimeter = ………………………………

(5) The length of a rectangle is 5 cm more than its width. Let the length be L cm, then the width will be ……………… cm

Third: Equations

Solve each of the following equations:

(1) $X + 3 = 12$

……………………………………………………………………………………………

……………………………………………………………………………………………

(2) $Y + 5 = 7$

……………………………………………………………………………………………

……………………………………………………………………………………………

(3) $Y - 5 = 7$

……………………………………………………………………………………………

……………………………………………………………………………………………

(4) $X - 3 = 24$

....

....

(5) $3X = 12$

....

....

(6) $7Y = 7$

....

....

(7) $2X + 4 = 10$

....

....

....

....

(8) $4X - 3 = 5$

....

....

....

....

SHEET (8)

Revision

[1] Complete:

(1) (a × b) × c = a × (b × c) is called ……………………………… property

(2) a × b = b × a is called ……………………………… property

(3) If x – 1 = 7, then x = ……

(4) If 5 x = 35, then x = ……

(5) 1 , 3 , 9 , 27 , ……

(6) 1 , 3 , 6 , 10 , ……

(7) Five times of a number x is: ………………

(8) Subtract 5 from double of the number x: ……………………

(9) Four times the number x is ……………

(10) The additive neutral element is ……… and the multiplicative neutral element is ………

(11) If x = 2, then 3 x – 5 = ………

(12) If the length of the base is 10 cm and the corresponding height is 4 cm, then the area of this triangle is ………… cm^2.

(13) If the area of triangle is 20 cm^2 and its height is 5 cm, then the length of its base is ………………

(14) The smallest prime number is …………

(15) The area of triangle = $\frac{1}{2}$ × ……… × ………

(16) The smallest odd number is …………

[2] Use the properties to find the value of:

(1) 48 + 37 + 52 + 63

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

(2) $8 \times 36 \times 125$

………………………………………………………………………………………………

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………………………………………………………………………………………………

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[3] Solve the following equations:

(1) $5x + 10 = 45$

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

(2) $3x - 11 = 1$

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

[4] List each of the following sets:

(1) The set of natural numbers less than 5

……………………………………………………………………………………

(2) The set of natural numbers greater than or equal 3

……………………………………………………………………………………

[5] If $x = 2$, $y = 1$ and $z = 3$ find the value of:

(1) $x + z - y$

……………………………………………………………………………………

(2) $(z - y) \div x$

……………………………………………………………………………………

SHEET (9)

The Area

Area of a triangle

Area = $\frac{1}{2}$ × base × height $\quad Base = \frac{2 \times area}{height} \quad Height = \frac{2 \times area}{base}$

(1) Find the area of a triangle whose base length is 6 cm and its height is 5 cm……………………………………………………………………………

(2) Find the area of a triangle whose base length is 10 cm and its height is 9 cm……………………………………………………………………………

(3) If the area of a triangle is 30 cm^2 and its height is 5 cm. Find its base……………………………………………………………………………

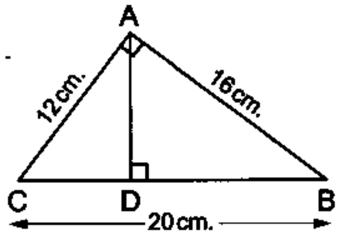
(4) If the area of a triangle is 90 cm^2 and its base is 10 cm. Find its height……………………………………………………………………………

(5) ***In the opposite figure :***

ABC is a right-angled triangle at A , $\overline{AD} \perp \overline{BC}$

If AC = 12 cm. , AB = 16 cm.

and BC = 20 cm. Find the length of $\overline{AD}$

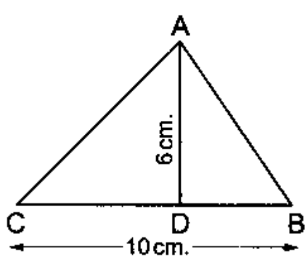


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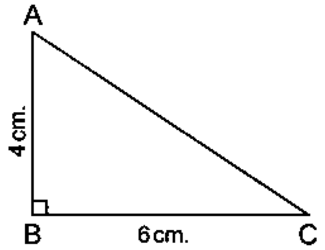
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(6) Find the area of △ ABC in each of the following triangles:

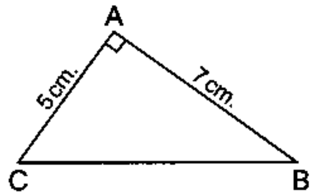
(a)



(b)



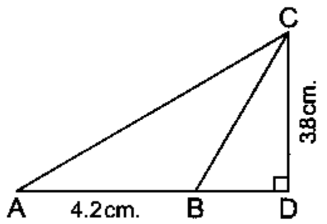
(c)



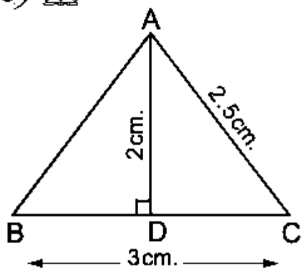
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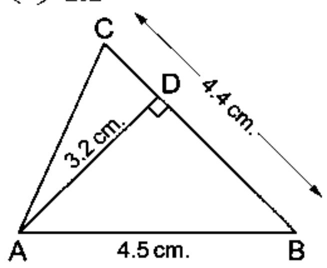
(d)



(e)



(f)



....

....

(7) If the area of a triangle is 60 cm^2 and the base length is 7.5 cm. , calculate its corresponding height.

....

(8) The area of a triangle is 180 cm^2 , and the height is 45 cm. Find it corresponding base length.

....

(9) Which area is greater : a triangle with base length = 3.25 dm. and its corresponding height = 4 dm. or a rectangle with dimensions of 26 cm. and 20 cm. ? Find the difference in cm^2.

....

....

....

Area of a parallelogram

Area = base × height $\quad$ $Base = \frac{area}{height}$ $\quad$ $Height = \frac{area}{base}$

(1) The area of a parallelogram whose base length is 8 cm and its height 10 cm is ……………………… cm^2.

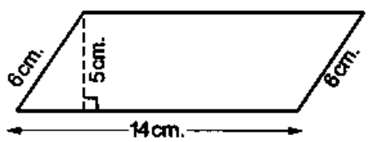
(2) Find the area of a parallelogram whose base length is 6 cm and its corresponding height is 3 cm.

(3) If the area of a parallelogram is 80 cm^2 and its height is 10 cm, then its corresponding base = …………………… cm

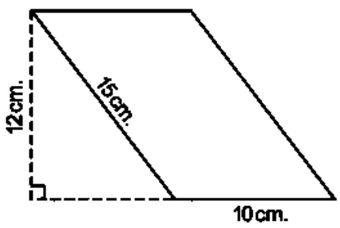
(4) If the area of a parallelogram is 18 cm^2 and its base is 3 cm. Find its corresponding height = …………………… cm

(5) ***Find the area of each of the following parallelograms :***

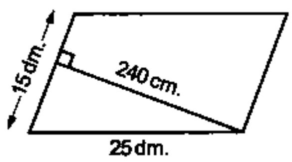
[a]



[b]



[c]



……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

(6) **If the area of a parallelogram is 36 cm^2 and its height is 9 cm. , then find the length of the corresponding base of this height.**

……………………………………………………………………………………………

(7) **🕮 Which area is greater : the area of a parallelogram whose base length is 15.7 cm. and height 9.4 cm. or the area of a triangle whose base length is 14 cm. and height 18 cm.**

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

Area of a square

Area = S × S   Area = $\frac{1}{2}$ × D × D

(1)	Find the area of a square whose side length is 7 cm. …………………………………………………………………………
(2)	Find the area of a square whose side length is 5 cm. …………………………………………………………………………
(3)	If the area of a square is 25 cm^2, then its side length = ………… cm …………………………………………………………………………
(4)	Find the area of a square whose diagonal length is 8 cm. …………………………………………………………………………
(5)	Find the area of a square whose diagonal length is 10 cm. …………………………………………………………………………
(6)	If the area of a square is 50 cm^2, then its diagonal length = ……… cm
(7)	Complete : (a) The area of the square = the side length × ……… (b) The area of the square = $\frac{1}{2}$ × ……… × ……… (c) If the side length of the square = 4 cm. , then its area = ……… cm^2 (d) If the length of the diagonal of the square = 10 cm. , then its area = ……… cm^2
(8)	**A square is of side length 7 cm. , find its area.** …………………………………………………………………………
(9)	**The diagonal length of a square is 6 cm. , find its area.** …………………………………………………………………………

(10) If the length of the diagonal of a square is 5.4 cm. , then find its area.

....

(11) A square has a side length of 1.6 m. , find its area.

....

(12) If the area of a square is 64 cm^2. , find its side length and its perimeter.

....

(13) The area of a square is 24.5 cm^2. , find the length of its diagonal.

....

(14) Find the area of a square whose perimeter is 12 cm.

....

....

(15) Which is greater in area : a square of side length 9 cm. or another square of diagonal length 12 cm. ?

....

....

....

(16) Which is greater in area : a square whose diagonal is 10 cm.
or a right-angled triangle whose right angle sides are 8 cm. and 15 cm.

....

....

....

Area of a rhombus

Area = side × height   Area = $\frac{1}{2}$ × D1 × D2

$Side = \frac{area}{height}$ $Height = \frac{area}{side}$

(1) A rhombus is of side length 10 cm and its height is 4 cm, then its area = ………………………………………………………………… cm^2.

(2) If the area of a rhombus is 40 cm^2 and its height is 4 cm. Find its side length.

………………………………………………………………………………………………

(3) If the area of a rhombus is 40 cm^2 and its side length is 10 cm. Find its height.

………………………………………………………………………………………………

(4) If the lengths of the diagonals of a rhombus are 10 cm and 6 cm. calculate its area.

………………………………………………………………………………………………

(5) The area of a rhombus is 20 cm^2 and the length of one of its diagonals is 5 cm. Find the length of the other diagonal.

………………………………………………………………………………………………

(6) Which is greater: An area of a triangle whose base length is 12 cm and its corresponding height is 8 cm or an area of a square of side length 7 cm?

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

(7) Which is greater: An area of a rhombus whose diagonals lengths are 8 cm and 5 cm or an area of a square of diagonal length 8 cm?

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SHEET (10)

Circumference of a circle

Circumference of a circle = $2 \pi r$

= $\pi \times$ diameter length

$\pi = \frac{22}{7}$ or $\pi = 3.14$

(1) Find the circumference of a circle whose diameter length is 7 cm. ($\pi = \frac{22}{7}$)

……………………………………………………………………………………………………

(2) Find the circumference of a circle whose diameter length is 14 cm. ($\pi = \frac{22}{7}$)

……………………………………………………………………………………………………

(3) Find the circumference of a circle whose diameter length is 100 cm. ($\pi = 3.14$)

……………………………………………………………………………………………………

(4) A circle whose radius length is 7 cm, its circumference is ……………………… cm. ($\pi = \frac{22}{7}$)

……………………………………………………………………………………………………

(5) The circumference of a circle whose radius length is 14 cm is ……………………… cm. ($\pi = \frac{22}{7}$)

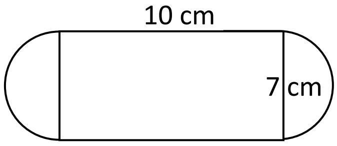
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(6) The circumference of a circle whose radius length is 3.5 cm is ……………………… cm. ($\pi = \frac{22}{7}$)

……………………………………………………………………………………………………

(7) The circumference of a circle whose radius length is 10 cm is …………π cm.

(8) Calculate the perimeter of the opposite figure. ($\pi = \frac{22}{7}$)



……………………………………………………………………………………………………

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(9) Find the diameter length of a circle whose circumference is 44 cm. ($\pi = \frac{22}{7}$)

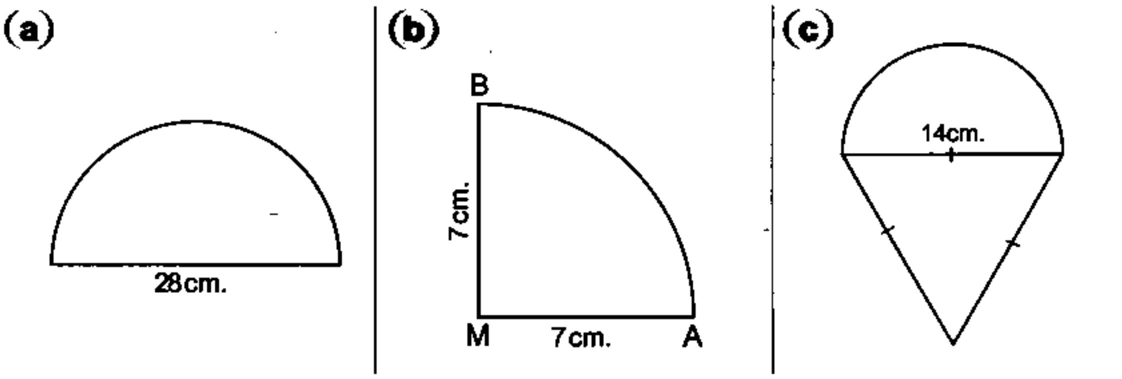
……………………………………………………………………………………………………

(10) Calculate the radius length of a circle whose circumference is 44 cm. ($\pi = \frac{22}{7}$)

……………………………………………………………………………………………………

(11) The circumference of a circle = ………………

(12) **Calculate the perimeter of each of the following figures where. "$\pi = \frac{22}{7}$"**



……………………………………………………………………………………………………

……………………………………………………………………………………………………

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SHEET (11)

Revision on unit (3)

First Completion questions

Complete each of the following to get a correct statement :

1. The circle whose diameter length is 14 cm. , $(\pi = \frac{22}{7})$ its circumference = ………… cm.
2. The area of the triangle whose base length is 12 cm. and its height 5 cm. = ………… cm^2.
3. The area of the rhombus whose side length = 10 cm. and its height is 9.6 cm. equals ………… cm^2.
4. The rhombus whose area is 36 cm^2 and the length of one of its diagonals is 8 cm. , then the length of the other diagonal = ………… cm.
5. The square whose area is 24.5 cm^2, the length of its diagonal = ………… cm.
6. A rhombus has two diagonals of lengths 6 cm. and 8 cm. , then its area = ………… cm^2.
7. $\frac{\text{The circumference of the circle}}{\text{The length of its diameter}}$ = …………
8. A rhombus of area 48 cm^2 , its height = 4.8 cm. , then its perimeter = ………… cm.
9. The length of the diagonal of the square whose area = 18 cm^2 is ………… cm.
10. The number of the altitudes of the parallelogram is …………
11. The radius length of the circle whose circumference is 62.8 cm. = ………… cm. $(\pi = 3.14)$
12. The length of the diagonal of a square is 12 cm. , then its area = ………… cm^2.
13. The square whose perimeter is 16 cm. , its area = ………… cm^2.
14. The square whose area is 72 cm^2 , the length of its diagonal = ………… cm.

Second Multiple - choices questions :

Choose the correct answer from those given between brackets :

1. The area of the rhombus whose diagonals are of lengths 12 cm. and 16 cm. = ... cm^2. (56 *or* 28 *or* 96 *or* 192)

2. The area of the triangle which the length of its base is 12 cm. and its height = 5 cm. is .... cm^2. (30 *or* 60 *or* 17 *or* 34)

3. The square whose diagonal length = 8 cm. , its area .... cm^2. (64 *or* 32 *or* 16 *or* 8)

4. If the lengths of two adjacent sides in a parallelogram are 5 cm. and 7 cm. , its smaller height = 3 cm. , then its area = ... cm^2. (15 *or* 21 *or* 36 *or* 9)

5. The parallelogram whose area is 36 cm^2. and the length of a side of it = 9 cm. , then the corresponding height to this side = ... long. (18 *or* 4 *or* 27 *or* 45)

6. The area of a rhombus is 30 cm^2. and the length of one of its diagonals 6 cm. , then the length of the other diagonal is .... cm. (4 *or* 6 *or* 8 *or* 10)

7. The perimeter of the square whose area is 25 cm^2. equals .... cm. (100 *or* 50 *or* 20 *or* 25)

8. The length of the base of a triangle whose area is 240 cm^2. and its height = 10 cm. is .... cm. (24 *or* 12 *or* 48 *or* 2400)

9. The circle whose the length of the greatest chords is 7 cm. , its perimeter = ... cm. $\left(\pi = \frac{22}{7}\right)$ (3.5 *or* 7 *or* 22 *or* 44)

10. The radius of the circle whose perimeter is 88 cm. equals .... cm. (7 *or* 14 *or* 28 *or* 56)

11. The perimeter of a rectangle is 16 cm. and its width is 3 cm. , then its area = ... cm^2. (15 *or* 39 *or* 48 *or* 24)

Third Essay questions :

Answer the following questions :

1 Which is greater in area :

A rhombus in which the lengths of its diagonals are 6 cm. and 8 cm. or a square in which the diagonal length = 8 cm.

2 Which is greater in area :

A square whose diagonal is 10 cm. long or the right-angled triangle in which the lengths of the sides of the right angle are 8 cm. and 15 cm.

3 The area of a rectangle equals the area of a square which its diagonal = 12 cm. long , Find the perimeter of the rectangle if its width = 8 cm. long.

4 A rhombus in which the lengths of its diagonals are 12 cm. , 16 cm. and its height is 9.6 cm. Calculate :

(a) The area of the rhombus.

(b) Its side length.

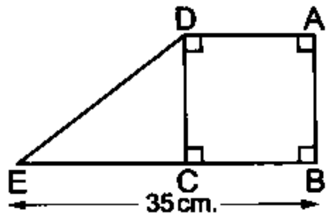
(c) Its perimeter.

5 If the length of the wheel a bicycle is 50 cm. what is the distance covered by the bicycle in metre if it turns 1200 times ($\pi = 3.14$).

6 In the opposite figure :

ABCD is a square , its perimeter is 60 cm. , $E \in \overrightarrow{BC}$, BE = 35 cm.

Find the area of the figure ABED



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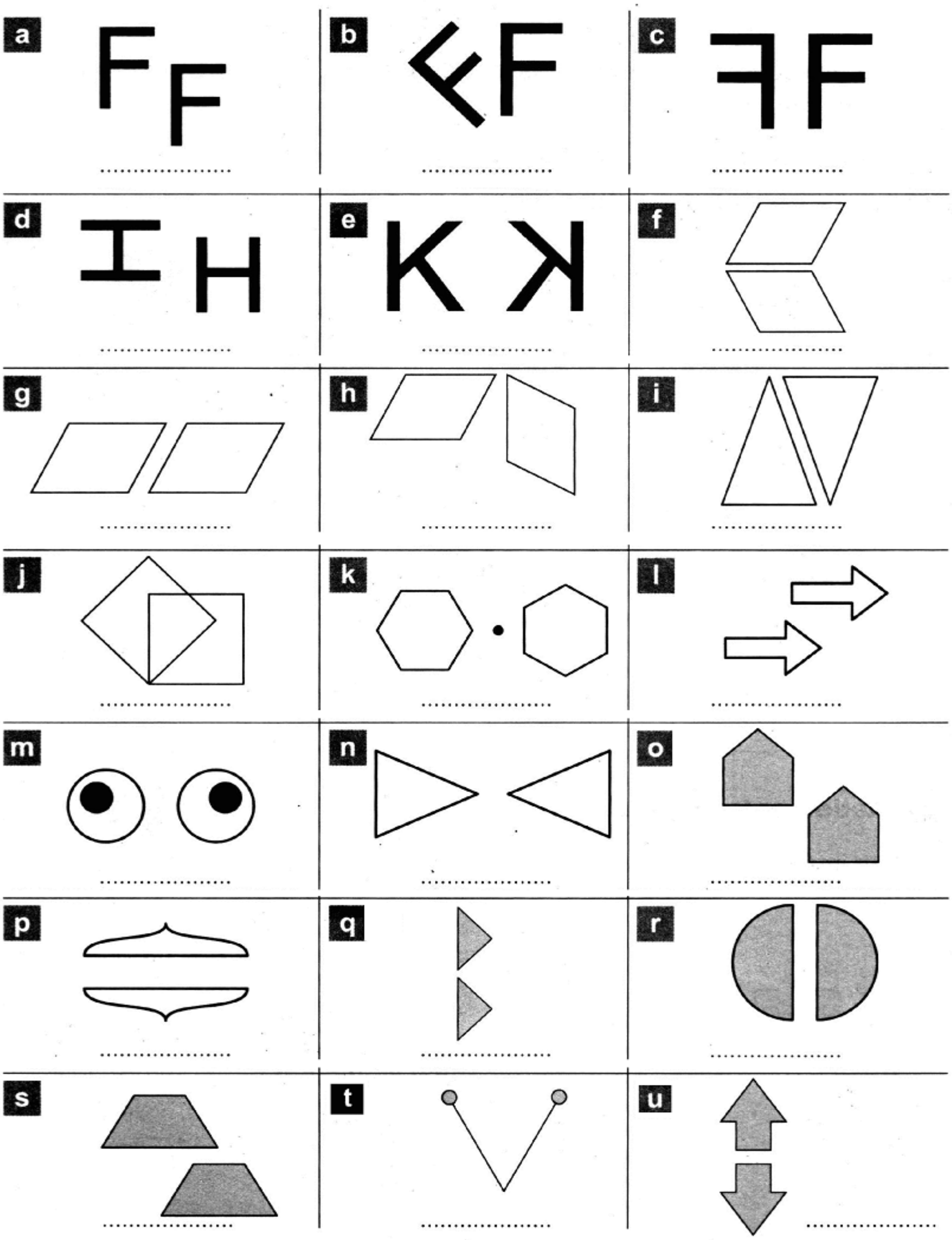
....

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SHEET (12)

Geometric Transformations

[1] Write (reflection), (rotation) or (translation):



[2] Choose the correct answer:

(a) Which of these techniques can transform the letter **b** into the letter **d** ?

(Reflection or Rotation or Translation)

(b) Which of these techniques can transform the letter **d** into the letter **p** ?

(Reflection or Rotation or Translation)

(c) Which of these techniques can transform the letter **M** into the letter **W** ?

(Reflection or Rotation or Translation)

(d) Which of these techniques can transform the letter **Z** into the letter **N** ?

(Reflection or Rotation or Translation)

[3] Write the letter of the point named by the coordinates:

a (8 , 6) are the coordinates of ....

b (2 , 2) are the coordinates of ....

c (5 , 4) are the coordinates of ....

d (0 , 0) are the coordinates of ....

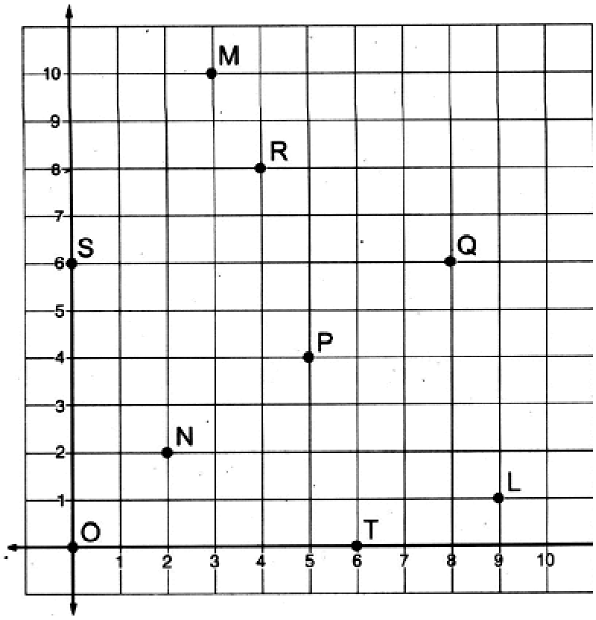
e (0 , 6) are the coordinates of ....

f (3 , 10) are the coordinates of ....

g (9 , 1) are the coordinates of ....

h (4 , 8) are the coordinates of ....

i (6 , 0) are the coordinates of ....

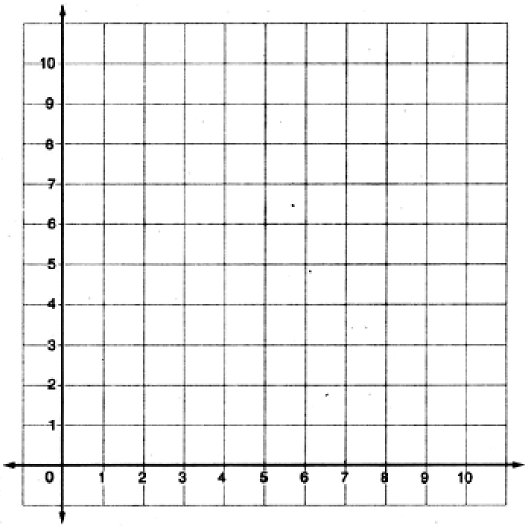


[4] In the opposite figure:

a Graph the figure ABCD where :
A = (2 , 8) , B = (3 , 4) , C = (8 , 4) and D = (7 , 8)

b What is the name of the figure ABCD ?
ABCD is ....

c Use the geometric instruments to find the coordinates of the intersection of the two straight lines $\overleftrightarrow{AC}$ and $\overleftrightarrow{BD}$

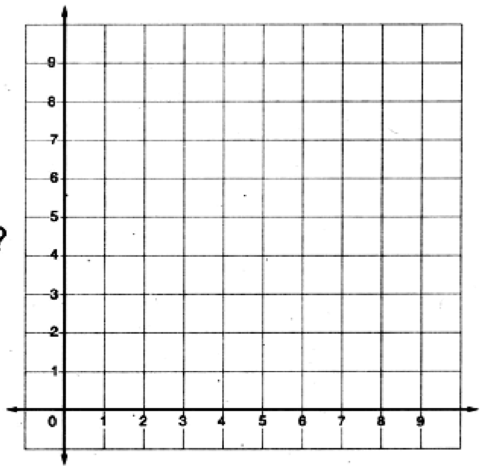


[5] In the opposite figure:

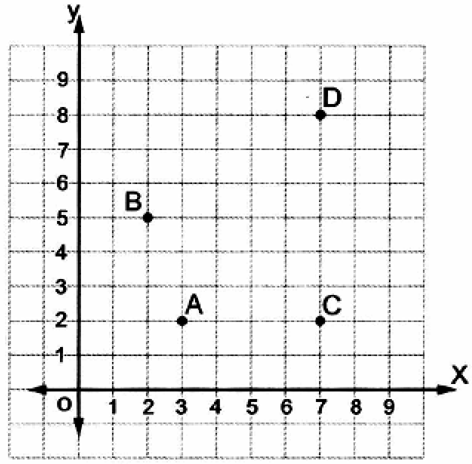
a Graph the figure XYZT where : X = (1 , 5) , Y = (5 , 1) , Z = (9 , 5) and T = (5 , 9)

b What is the name of the figure XYZT ?
XYZT is ....

c Use the geometric instruments to find the coordinates of the intersection of the two straight lines $\overleftrightarrow{XZ}$ and $\overleftrightarrow{YT}$ The coordinates are (..... , ...)



[6] In the opposite figure:



(a) Complete :

(1) Point C (····· , ·····) and

point D (····· , ·····)

(2) AC = ·········· units and

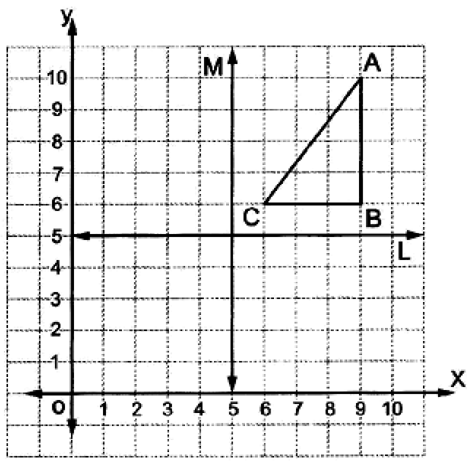
CD = ·········· units.

(b) On the figure , plot the points M (5 , 2) and N (5 , 8) , then complete :

CM = ·········· units. , MN = ·········· units. , ND = ·········· units.

The name of the figure MNDC is ·········· and the perimeter of the figure MNDC is ·········· units.

[7] In the opposite figure:



(a) Write the coordinates of points A , B and C.

A ································

B ································

C. ································

(b) Draw Δ A′ B′ C′ the image of Δ ABC by reflection across (L) and determine the coordinates of the vertices A′ , B′ and C′.

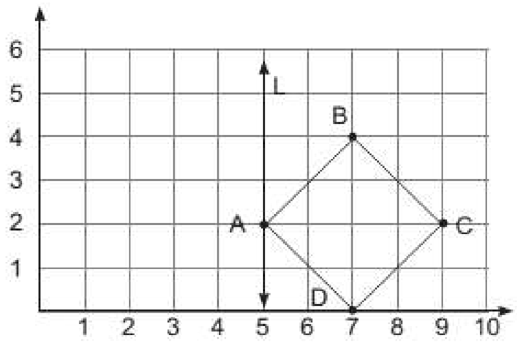
A′ ································ , B′ ································ and C′. ································

(c) Draw Δ A″ B″ C″ the image of Δ ABC by reflection across (M) and determine the coordinates of its vertices A″ , B″ and C″.

A″ ································ , B″ ································ and C″. ································

H.W.

1 In the cartesian Co. ordinates plane, from the following figure Find the image of the square by reflection on the straight line L wher A (5, 2), B (7, 4), C (9, 2), D (7, 0)



Then complete:

(A) The image of A by reflection in the straight line L is (........ , ...)

(B) The image of B by reflection in the straight line L is (........ , ...)

(C) The image of C by reflection in the straight line L is (........ , ...)

(D) The image of D by reflection in the straight line L is (........ , ...)

2 In the cartesian Co. ordinates plane, from the following figure

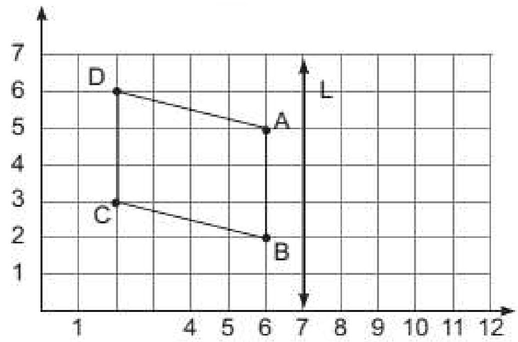
First Complete

A (.............. , ...)

B (.............. , ...)

C (.............. , ...)

D (.............. , ...)



Second: If L is the axis of reflection of the figure ABCD, Find the image of the figure by reflection in the straight line L, then complete.

(A) The image of A by reflection in the straight line L is A` (.............. , ...)

(B) The image of B by reflection in the straight line L is B` (.............. , ...)

(C) The image of C by reflection in the straight line L is C` (.............. , ...)

(D) The image of D by reflection in the straight line L is D` (.............. , ...)

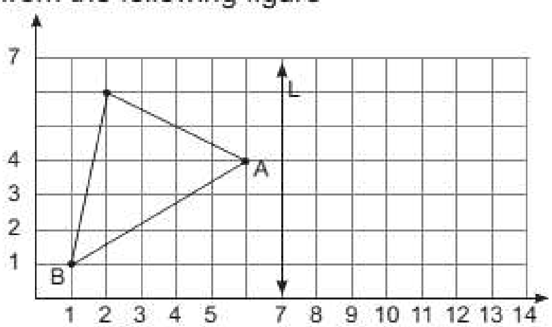
3 In the cartesian Co. ordinates plane, from the following figure

First: Complete

A (.............. , ...)

B (.............. , ...)

C (.............. , ...)



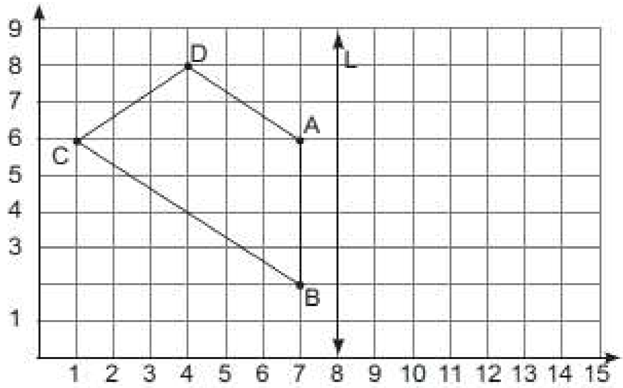
Second: If L is the axis of reflection of the figure ABC, Find the image of the figure by reflection in the straight line L, then complete.

(A) The image of A by reflection in the straight line L is A` (.............. , ...)

( ) The image of B by reflection in the straight line L is B` (.............. , ...)

(C) The image of C by reflection in the straight line L is C` (.............. , ...)

4 In the cartesian Co. ordinates plane, from the following figure



First: Complete

A (............... , ...)

B (............... , ...)

C (............... , ...)

D (............... , ...)

Second: If L is the axis of reflection of the figure ABCD, Find the image of the figure by reflection in the straight line L, then complete.

(A) The image of A by reflection in the straight line L is A` (............... , ...)

(B) The image of B by reflection in the straight line L is B` (............... , ...)

(C) The image of C by reflection in the straight line L is C` (............... , ...)

(D) The image of D by reflection in the straight line L is D` (............... , ...)

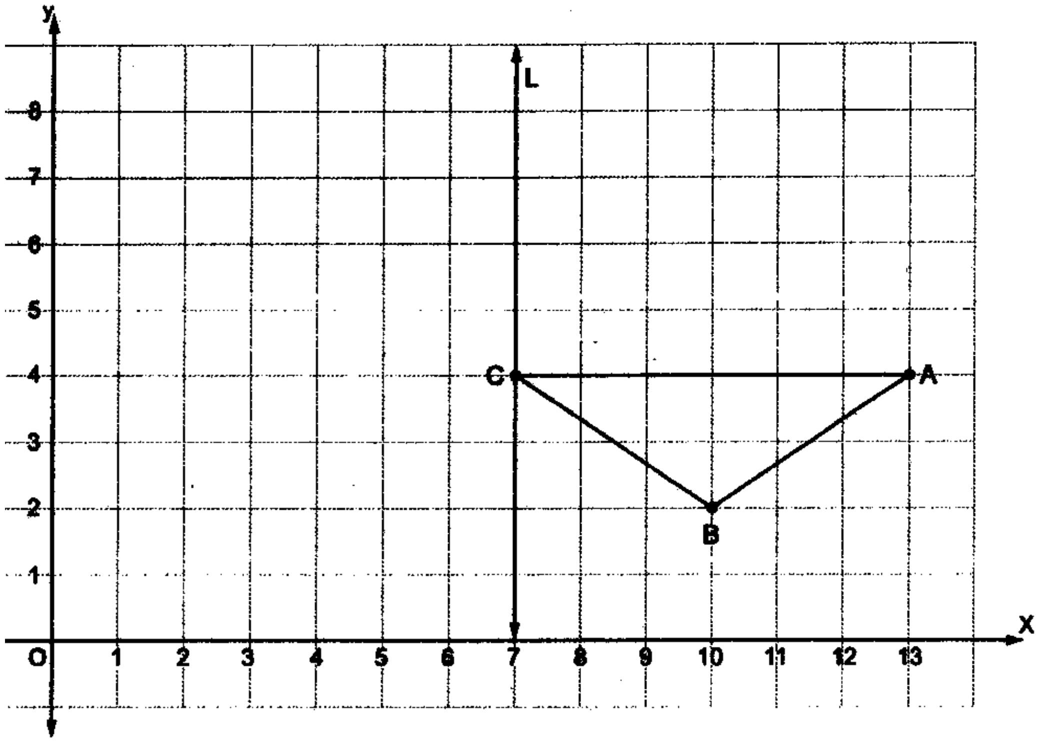
7 **In the cartesian co-ordinates**

(A) Determine the positions of the points A (8, 5), B (8, 2), C (5, 2), D (5, 7)

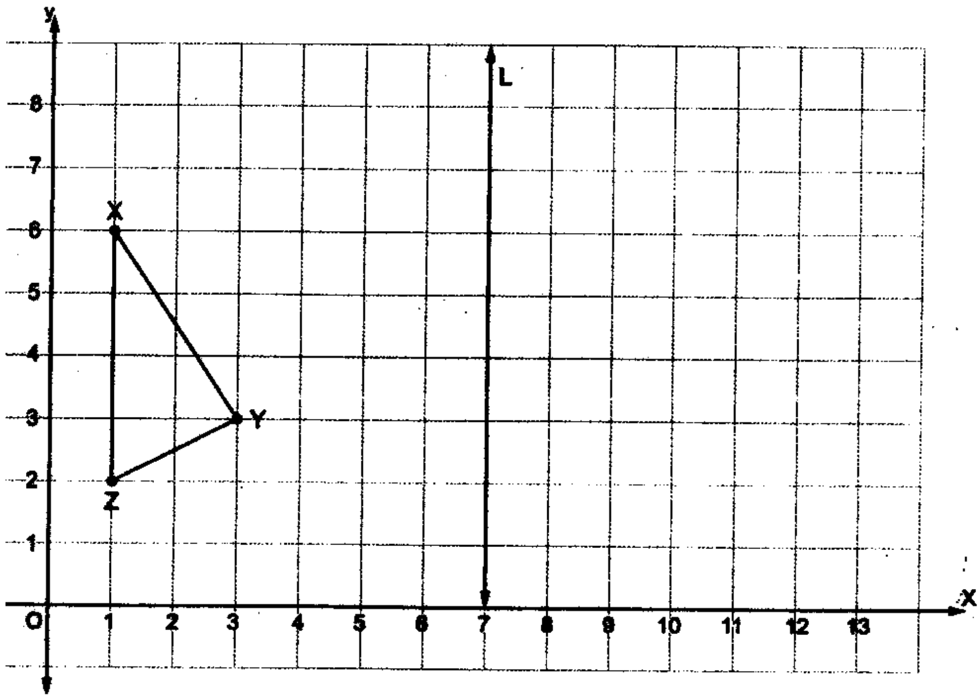
(B) Draw the line segments A B, A D, C D, B C

(C) If $\overleftrightarrow{CD}$ is the axis of reflection of the figure ABCD. Determine the image of the figure using the suitable symbols, then determine each of the ordered pairs which represent the vertices.

On the coordinate plane , if L is the axis of reflection for the triangle ABC , draw the image of Δ ABC in the straight line L



In the coordinate plane , if L is the axis of reflection of the shape XYZ , draw its image by reflection in L



SHEET (13)

Representing data by the histogram and frequency polygon

[1] Draw the histogram which represents the following table:

Sets	10-	20-	30-	40-	Total
Freq.	10	12	18	10	50

[2] The following table shows the frequency distribution of working hours of 50 workers:

Sets	4-	6-	8-	10-	Total
Freq.	14	10	8	18	50

Draw the frequency polygon which represents these data.

[3] Represent the following distribution by frequency polygon and the histogram:

Sets	5-	7-	9-	11-	13-
Freq.	4	12	10	7	8

[4] The following table shows the number of hours that a set of 50 students study in a day:

Sets	5-	7-	9-	11-	13-
Freq.	4	12	10	7	8

Represent these data by the histogram: